

Figure 1
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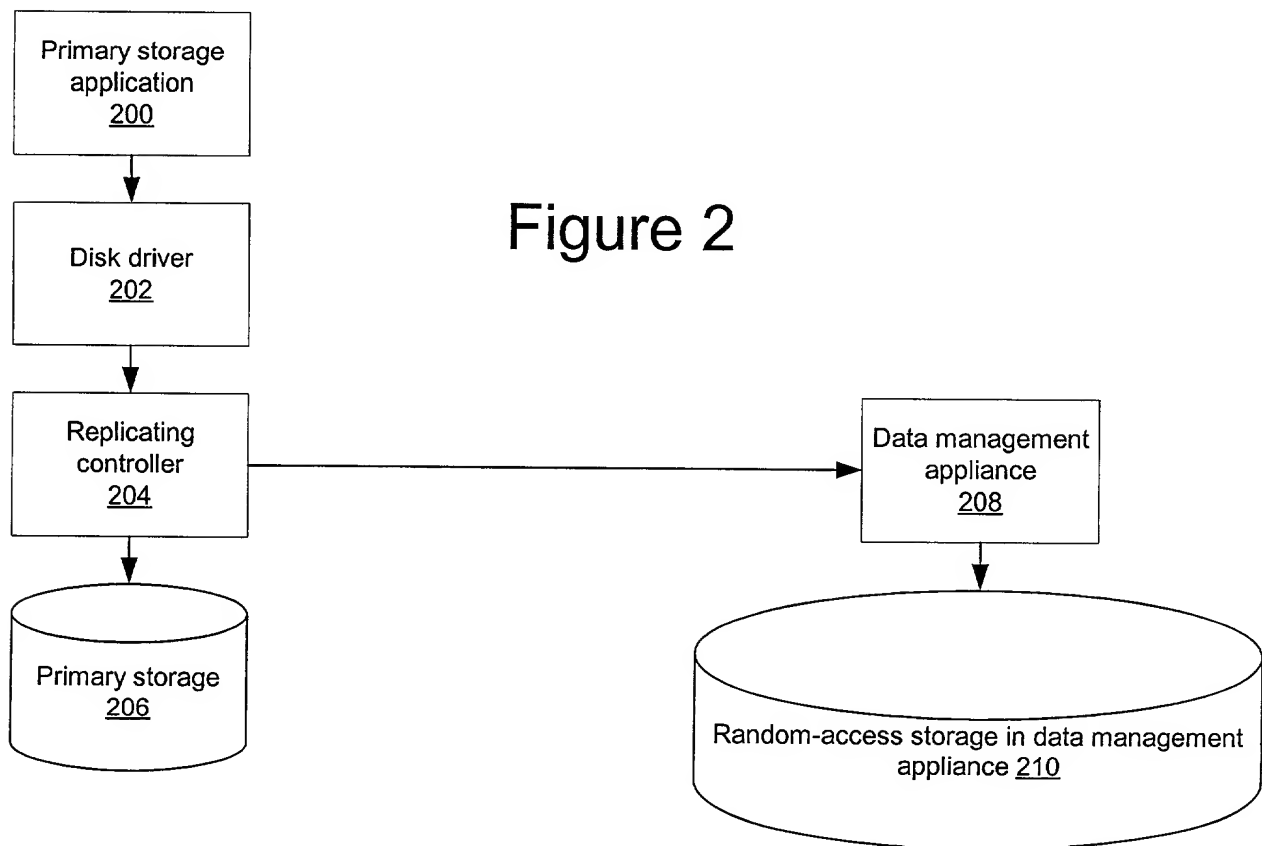


Figure 2

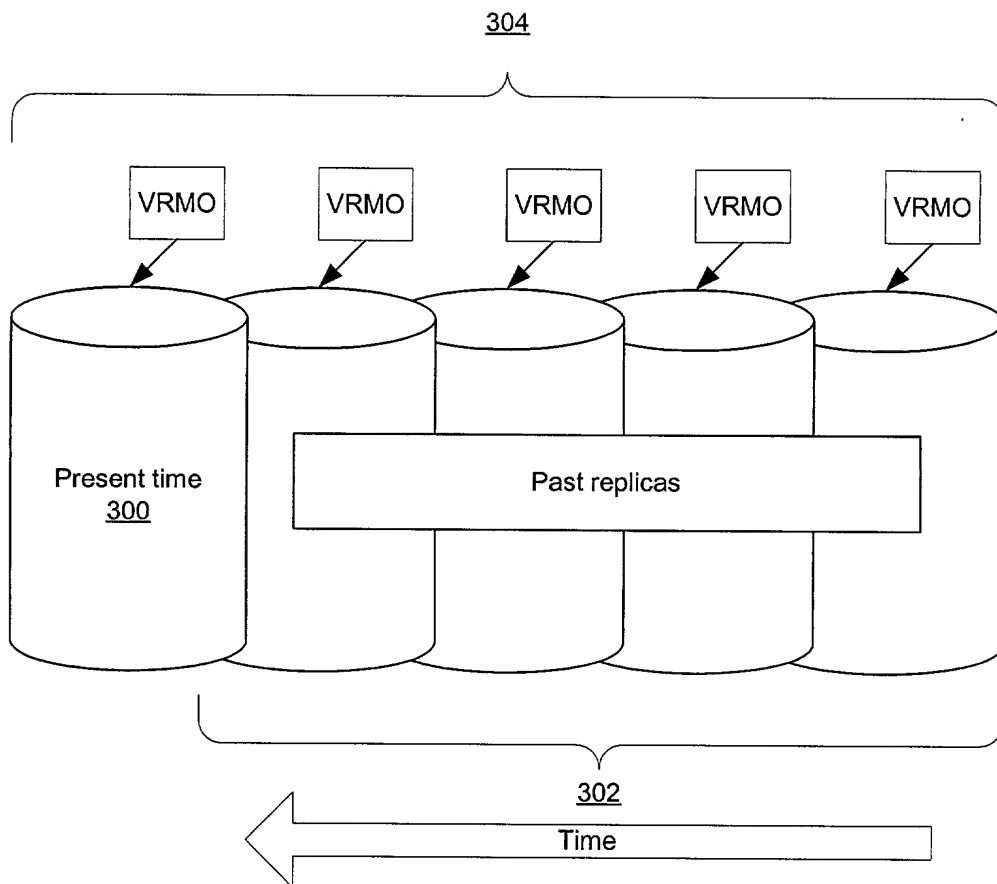


Figure 3

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FIG. 4 is a block diagram of a data management appliance 400, according to one embodiment. The appliance 400 includes a plurality of storage units 402, a forward journal, and a backward journal (snapshots) 404. The forward journal and backward journal (snapshots) 404 are used to manage data changes. The appliance 400 also includes an image tape 406 and a difference tape 408, which are used for data backup and recovery.

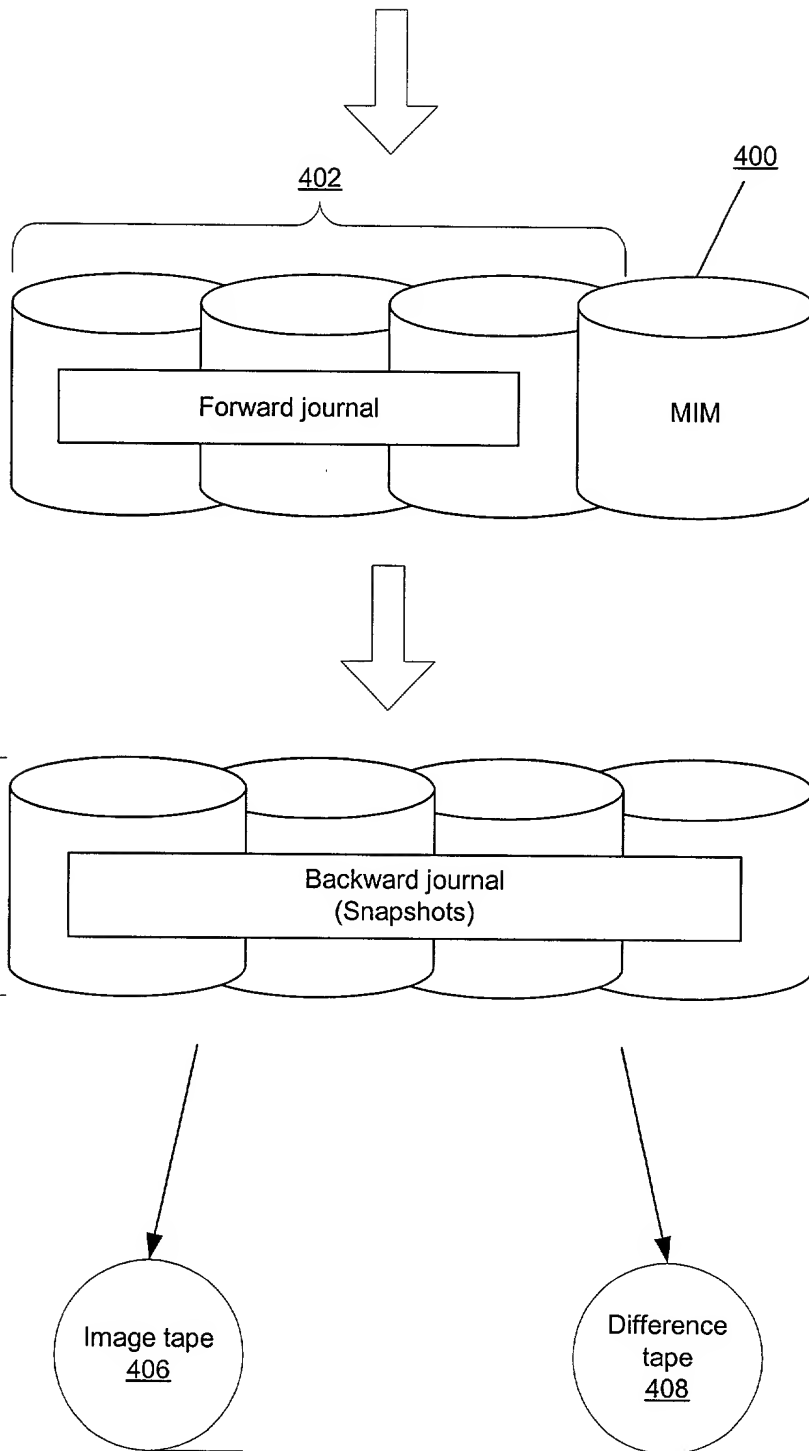


Figure 4

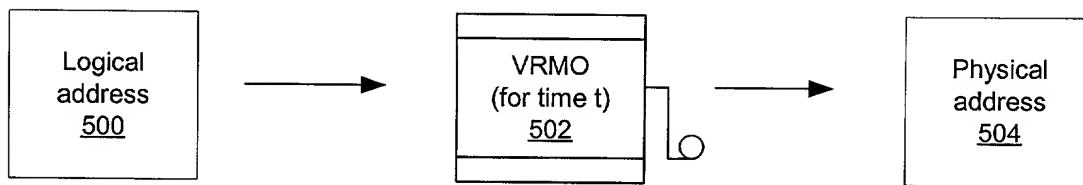


Figure 5

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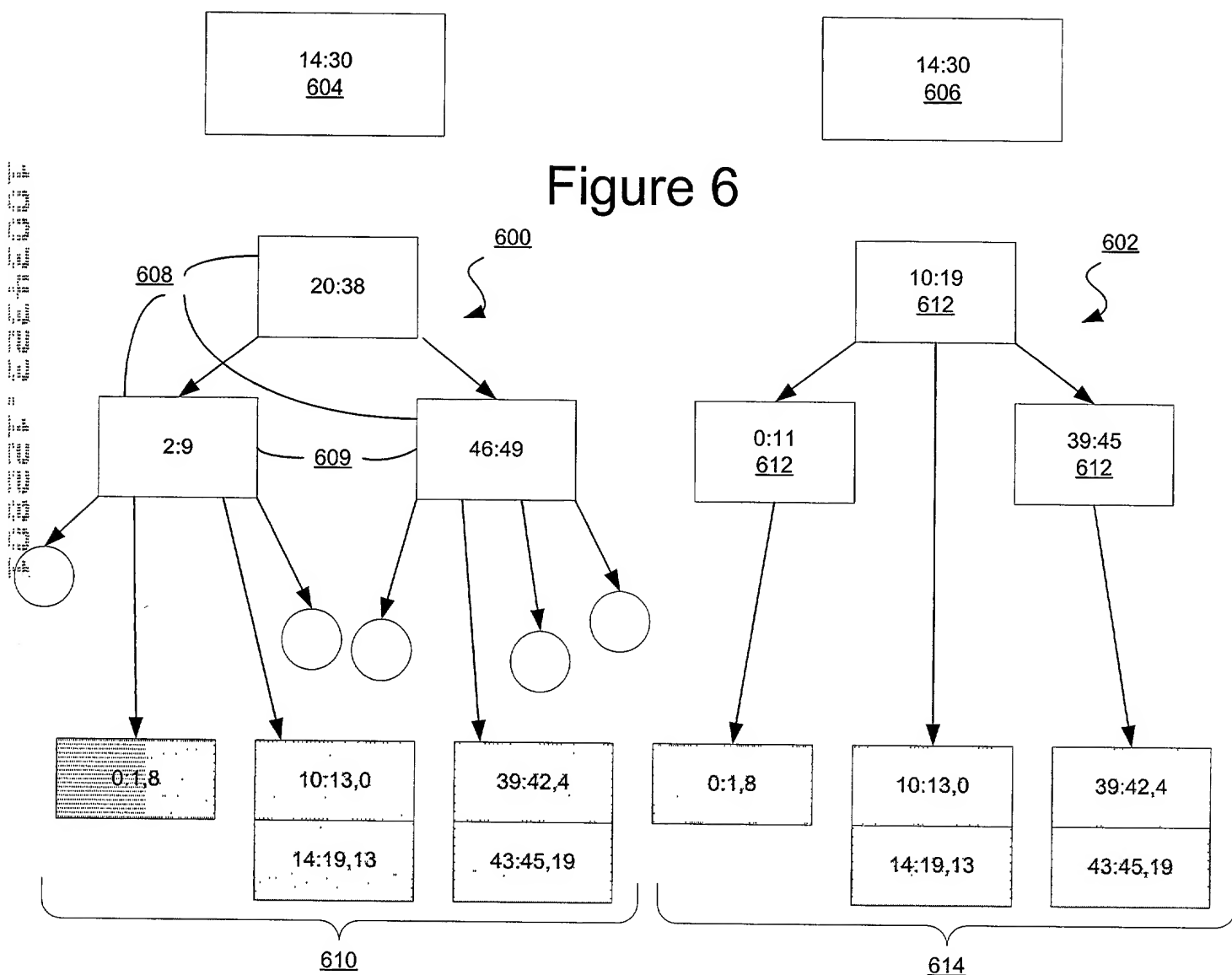


Figure 6

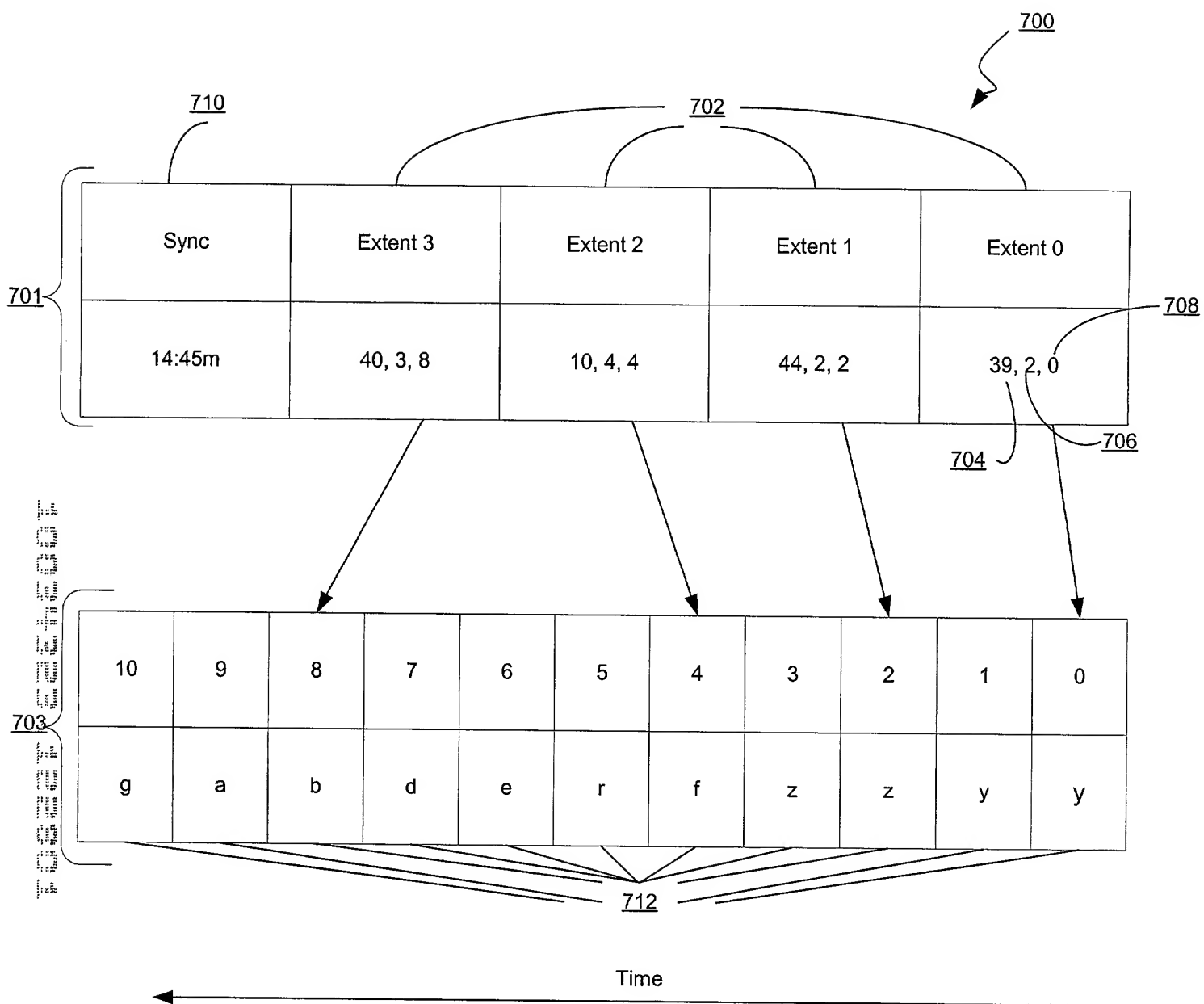


Figure 7

FIG. 8 is a diagram of a 10x10 grid 800. The grid is divided into four 5x5 quadrants. The top-left quadrant (rows 0-4, columns 0-4) contains the letters A through E. The top-right quadrant (rows 0-4, columns 5-9) contains the letters F through J. The bottom-left quadrant (rows 5-9, columns 0-4) contains the letters K through Q. The bottom-right quadrant (rows 5-9, columns 5-9) contains the letters R through U. The grid is labeled 800 in the top right corner. The label 802 points to the top-left corner of the grid. The label 804 points to the first row of the grid.

800									
802									
0	1	2	3	4	5	6	7	8	9
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
10	11	12	13	14	15	16	17	18	19
R	R	R	R	R	R	R	R	R	R
20	21	22	23	24	25	26	27	28	29
S	S	S	S	S	S	S	S	S	S
30	31	32	33	34	35	36	37	38	39
T	T	T	T	T	T	T	T	T	T
40	41	42	43	44	45	46	47	48	49
U	U	U	U	U	U	U	U	U	U

Figure 8

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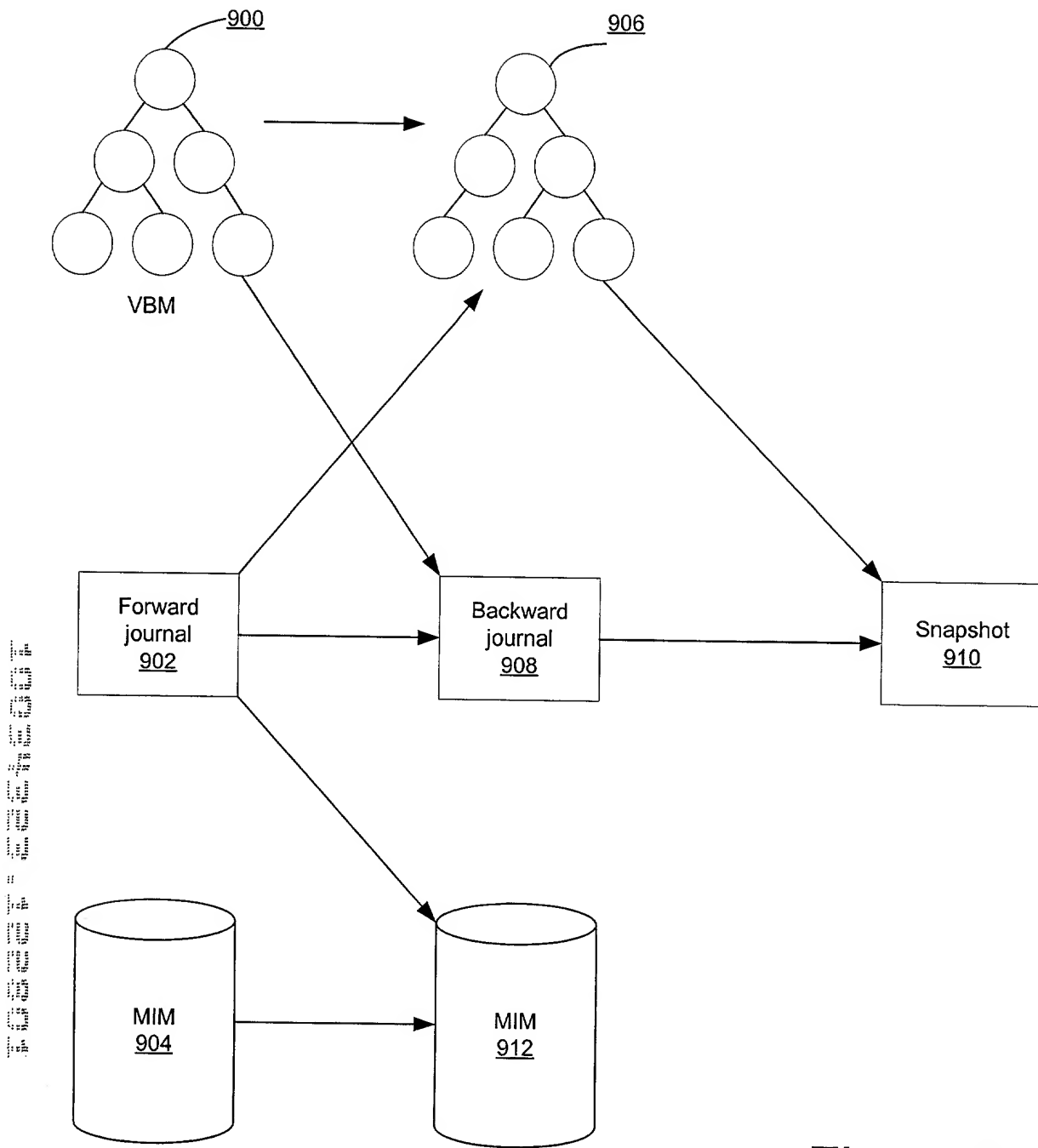


Figure 9

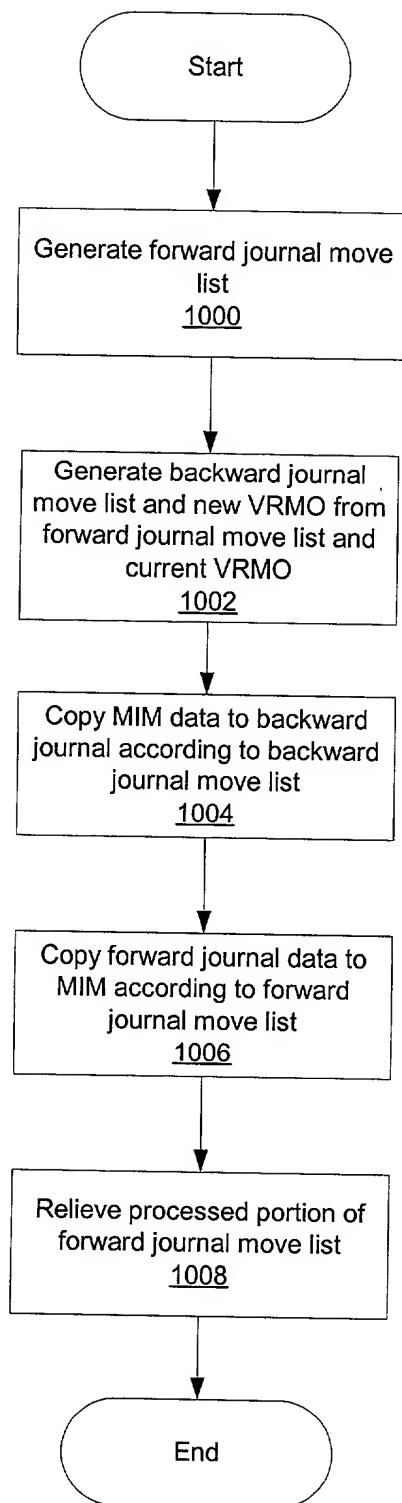
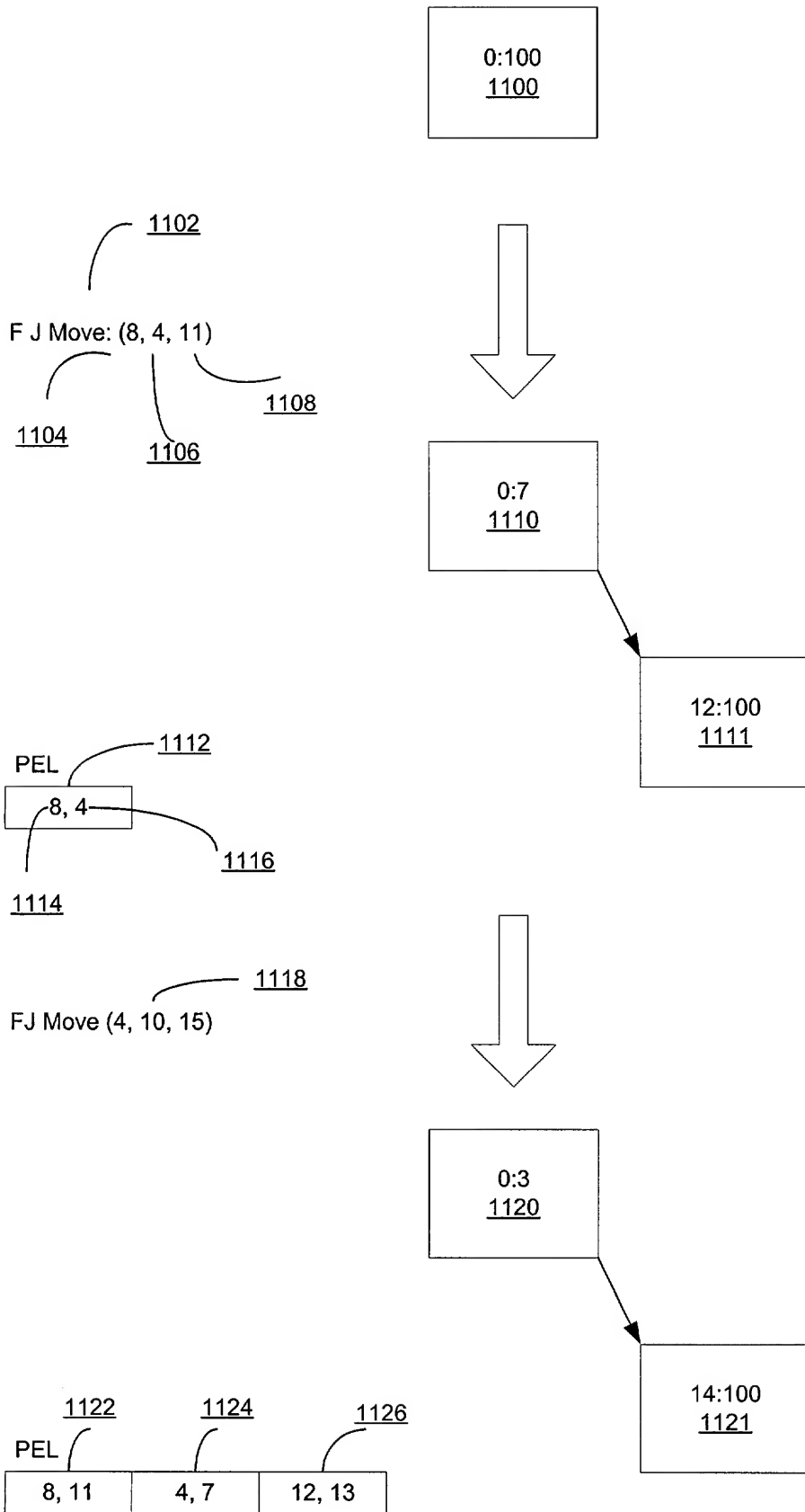


Figure 10

Figure 11

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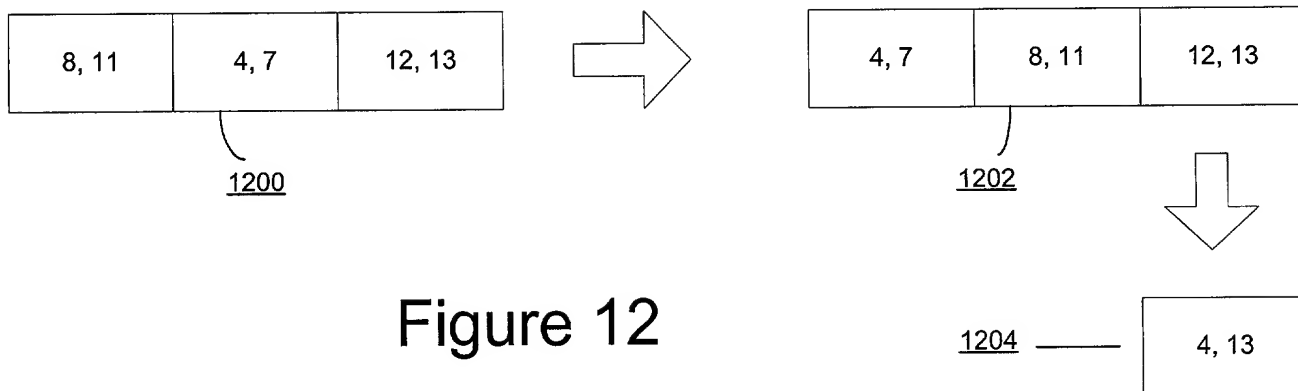


Figure 12

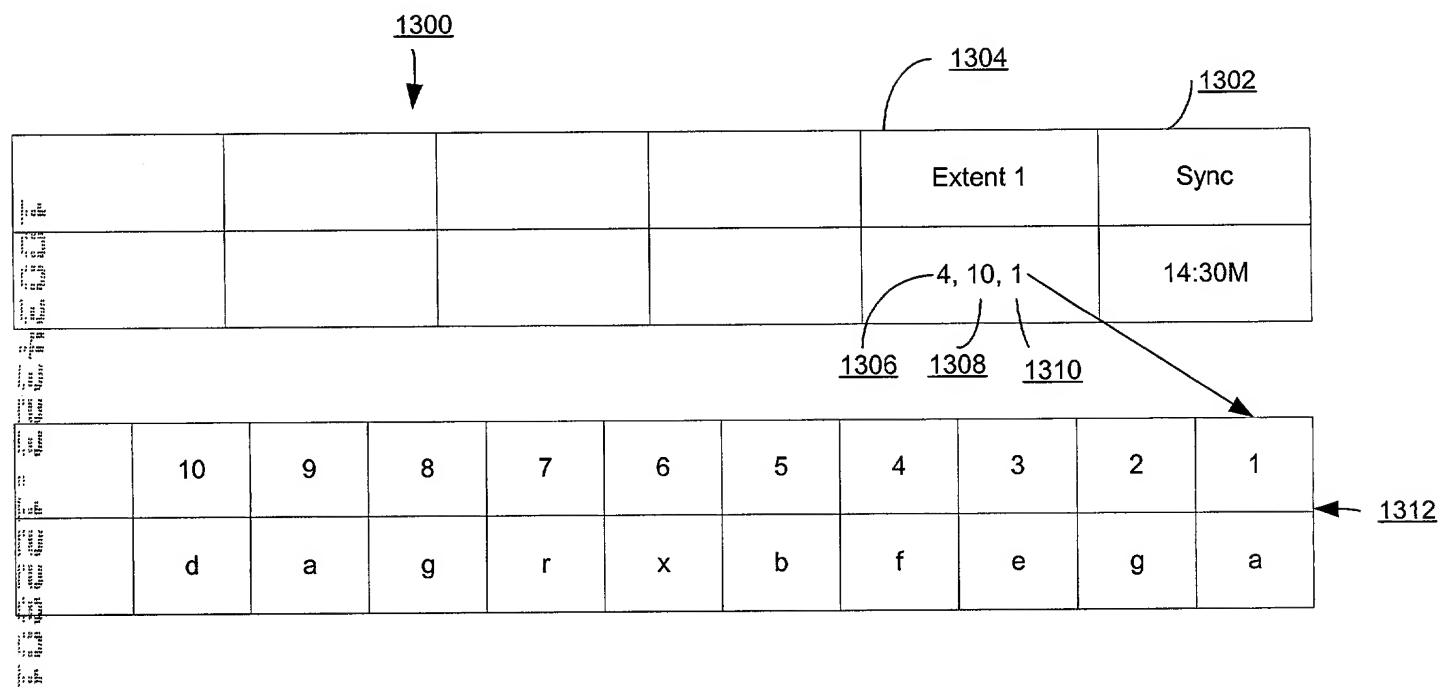


Figure 13

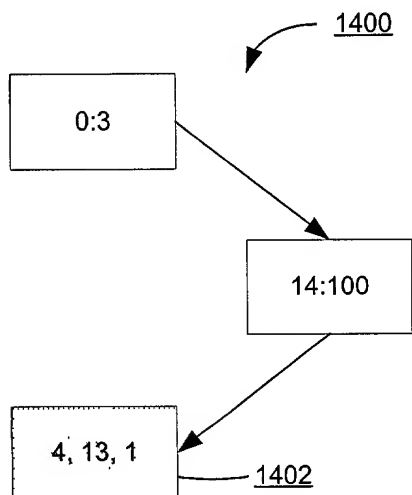


Figure 14

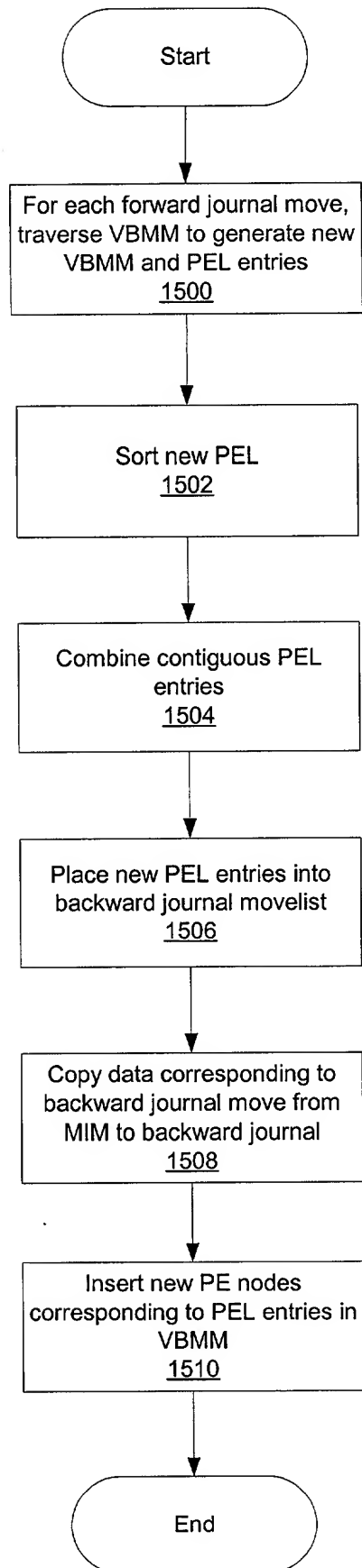


Figure 15

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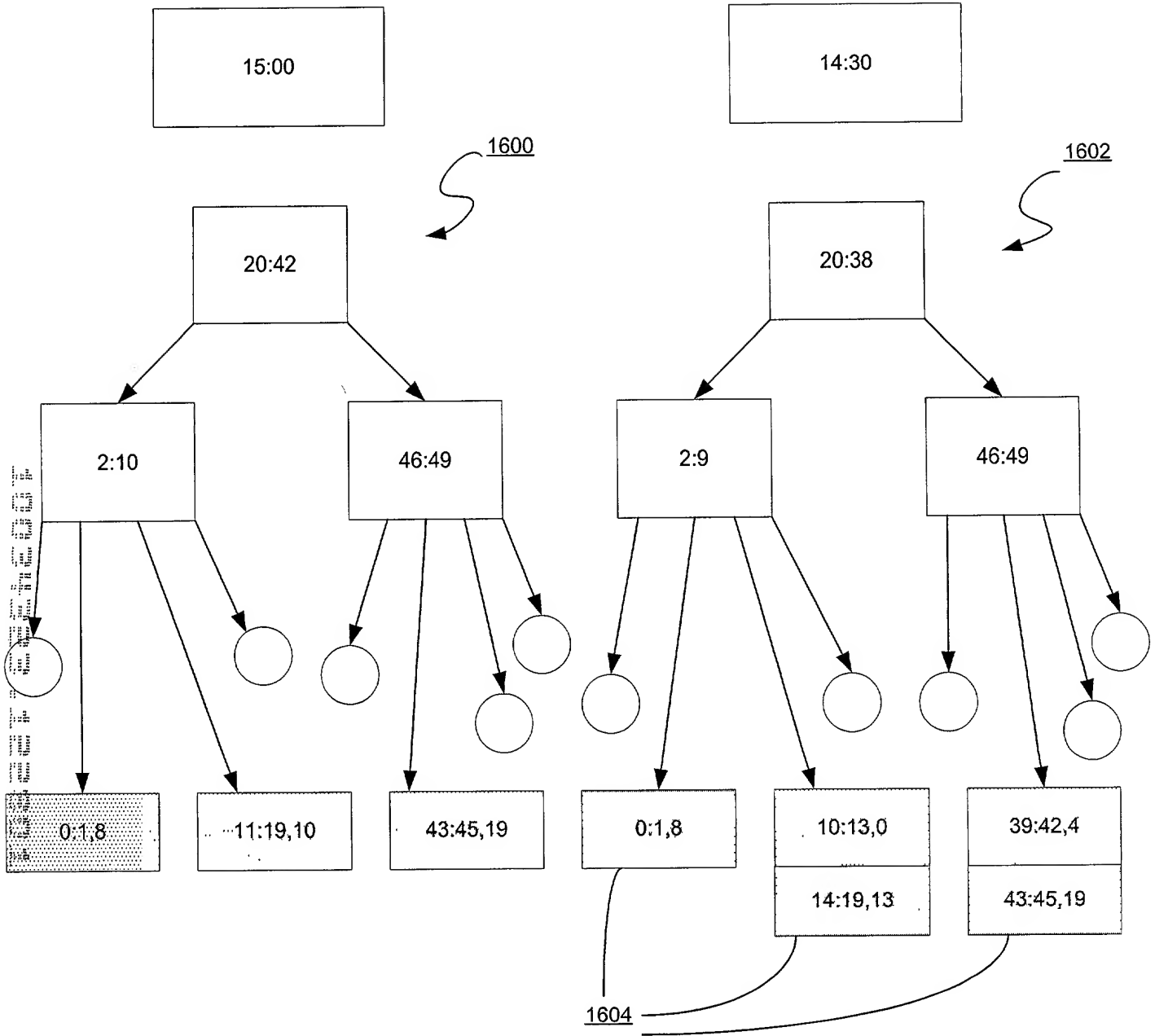
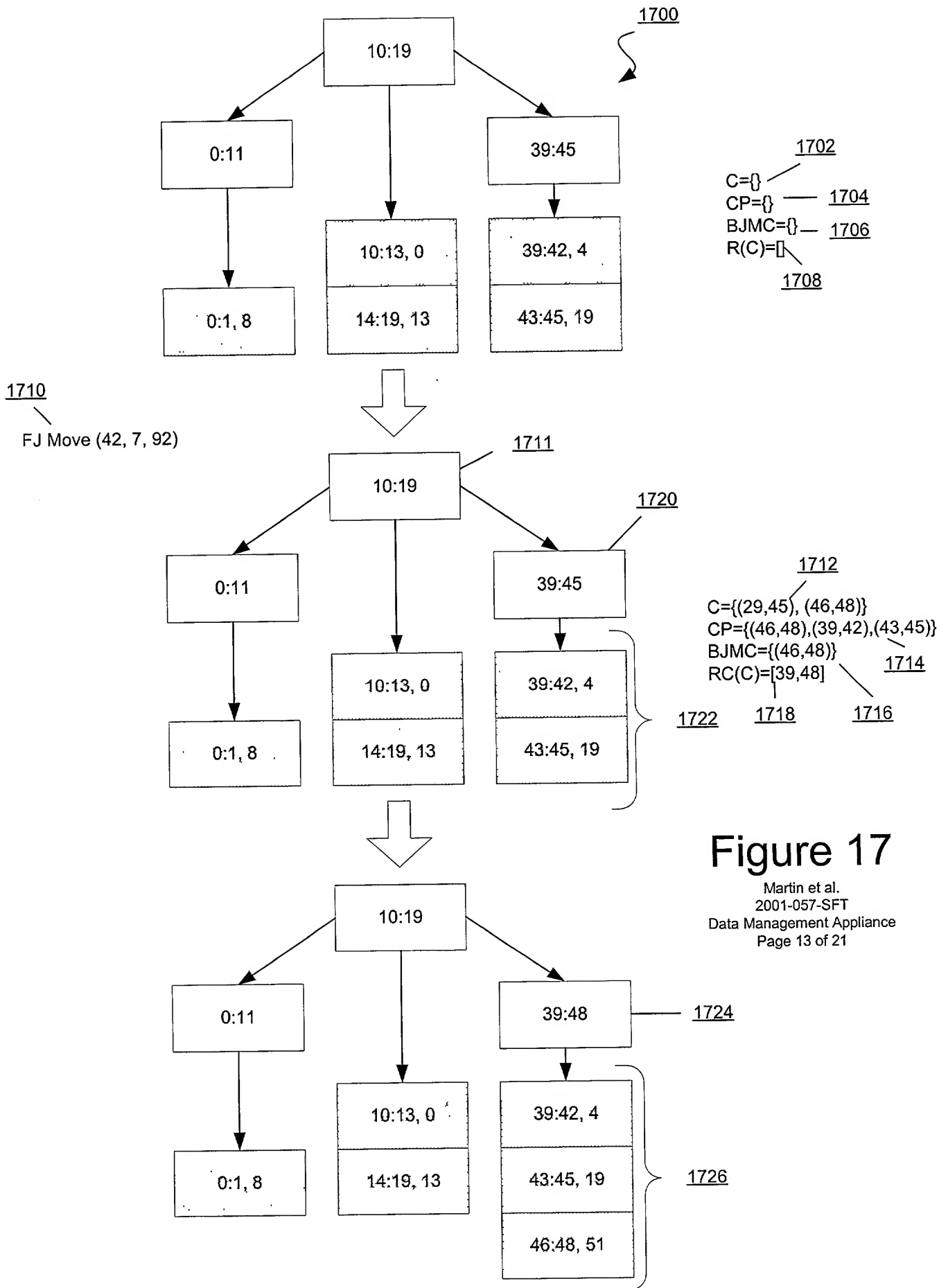


Figure 16



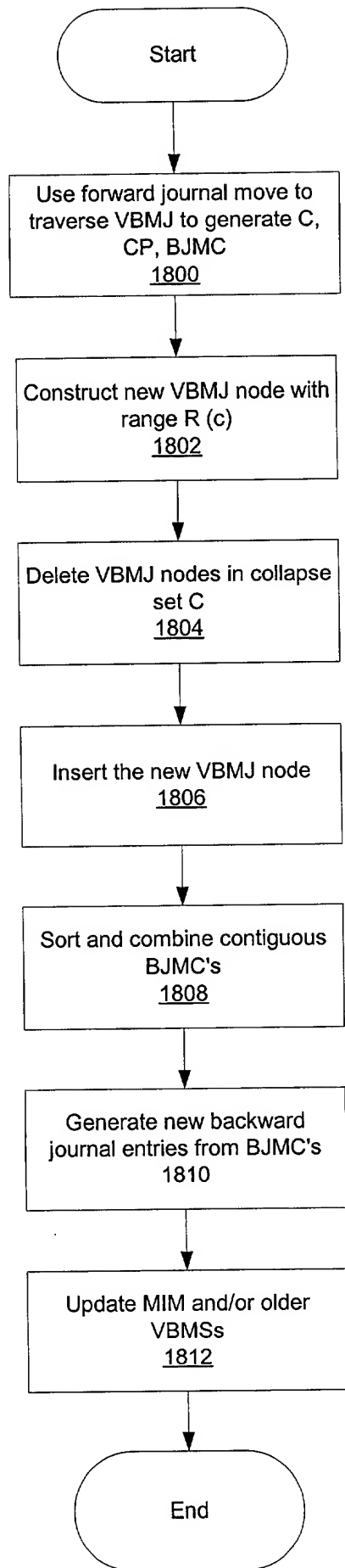


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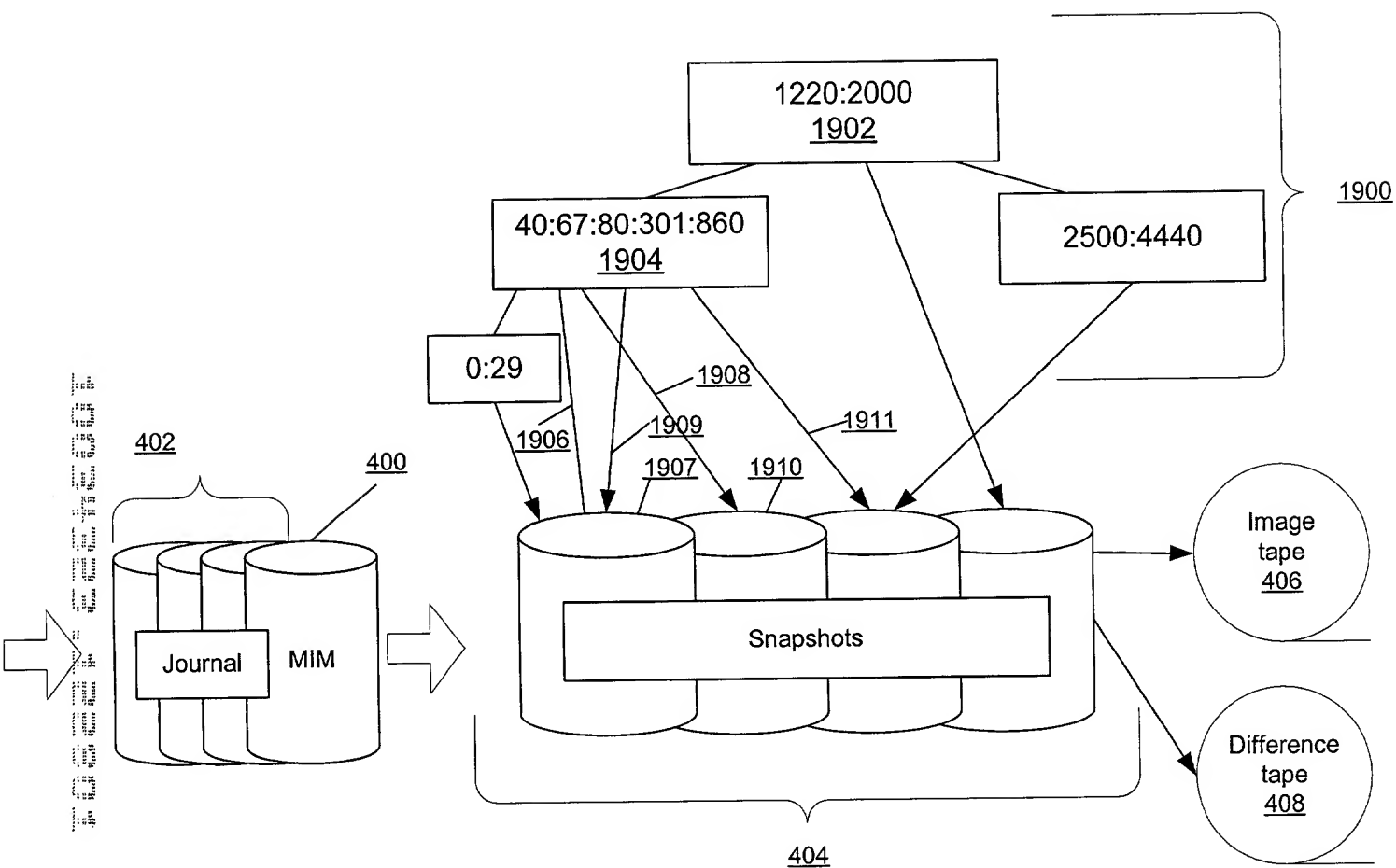


Figure 19

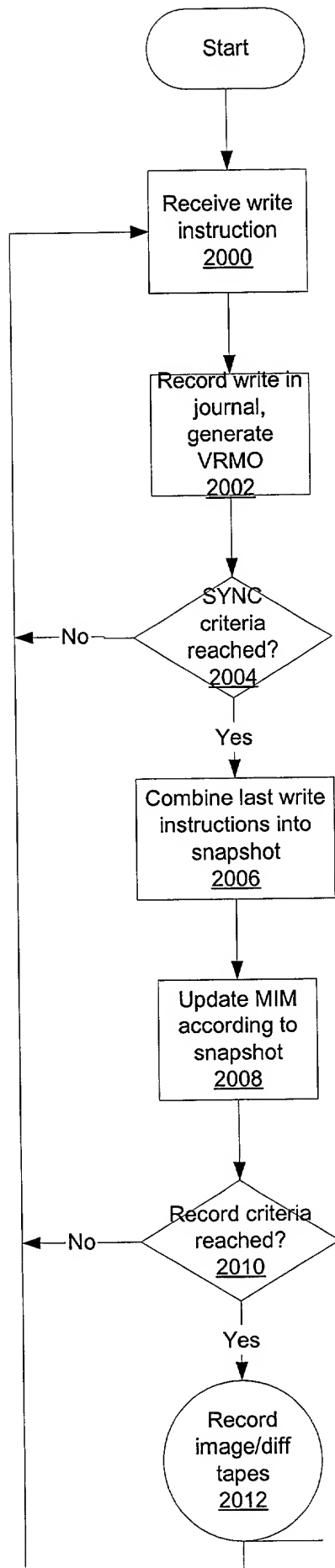


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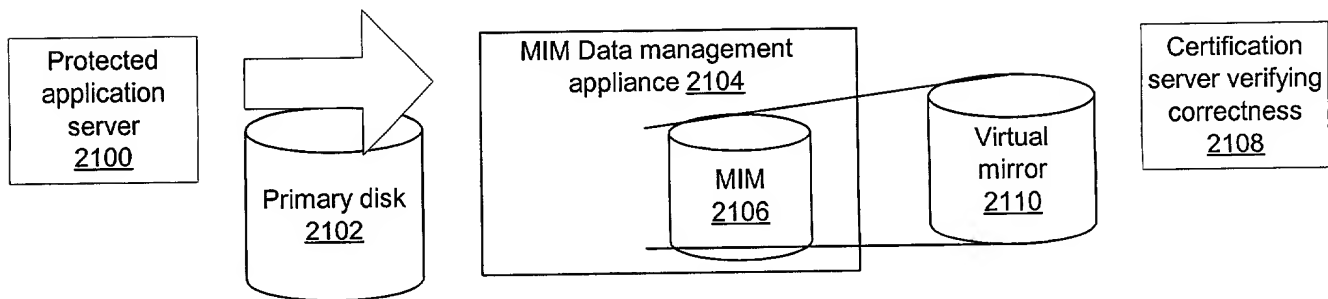


Figure 21

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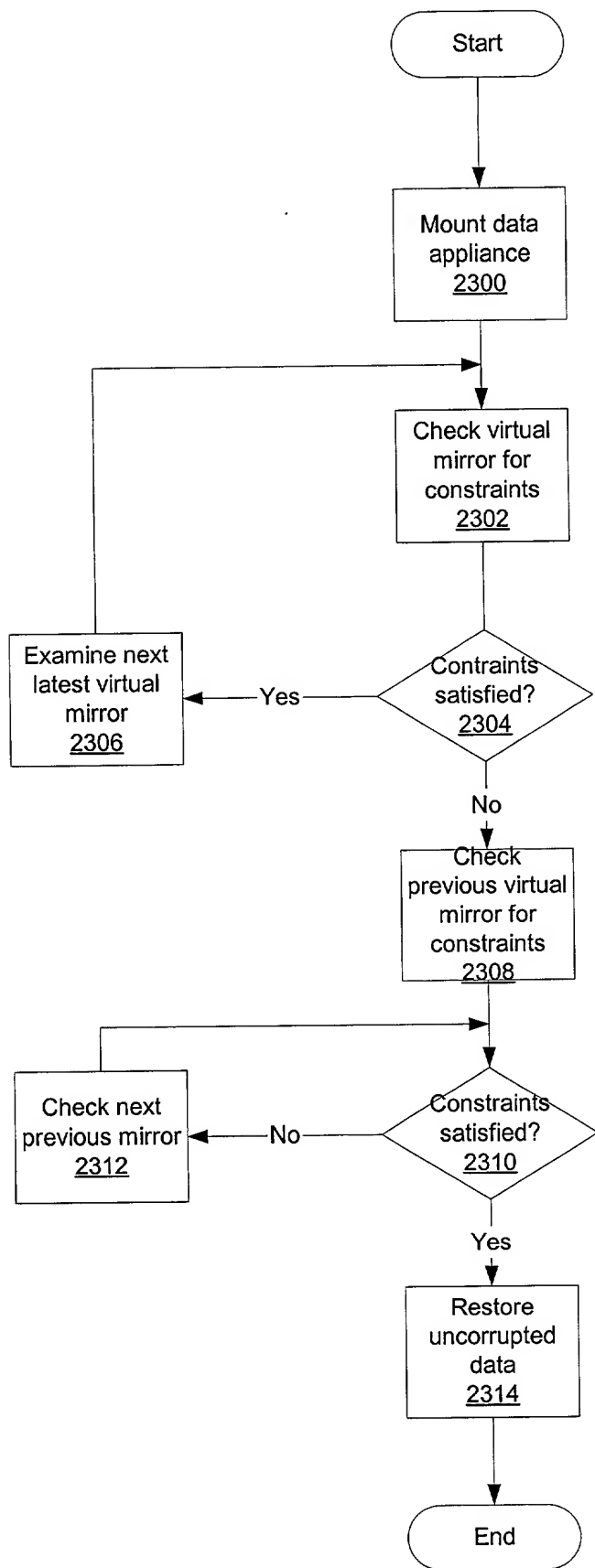


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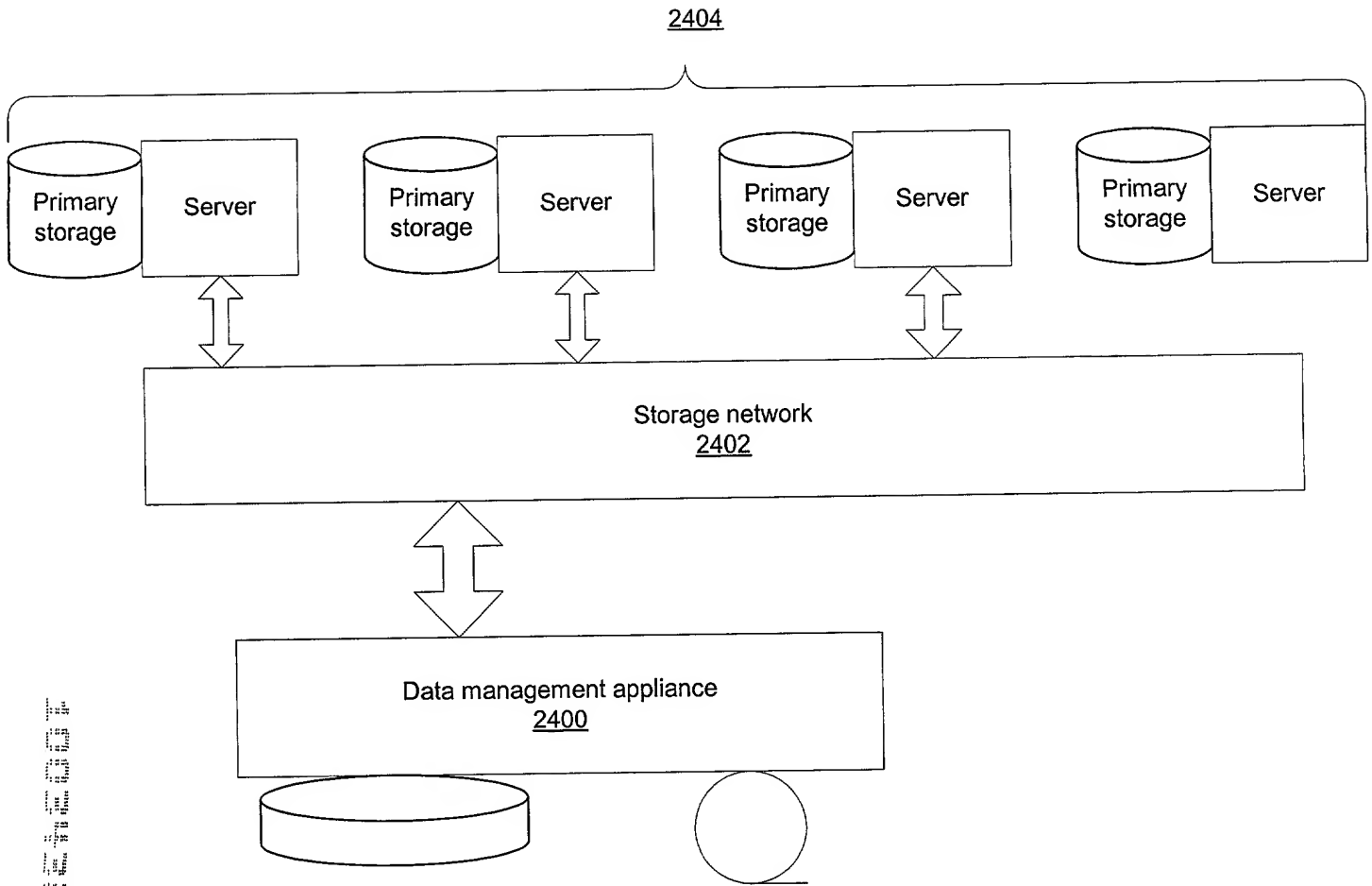


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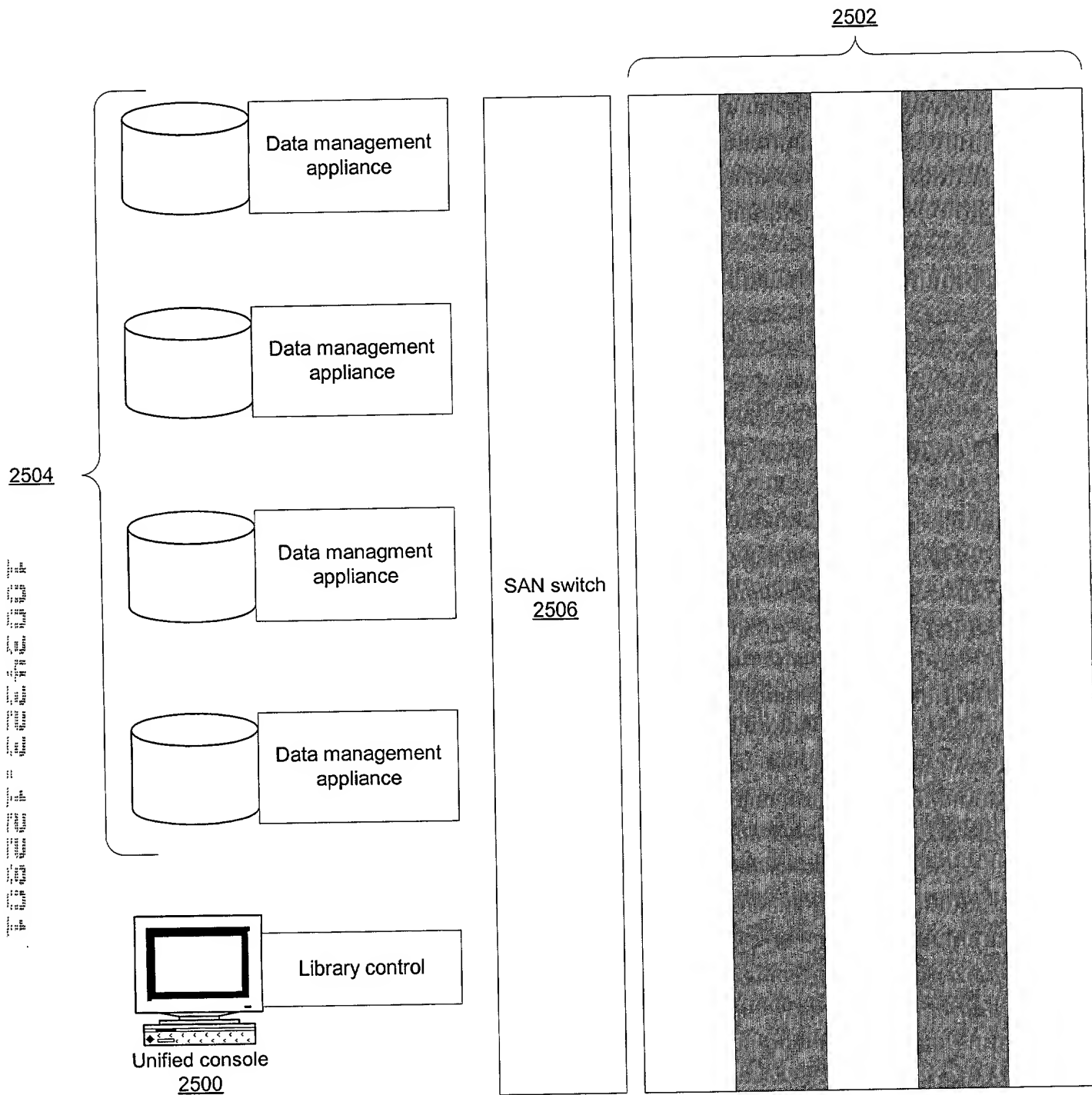


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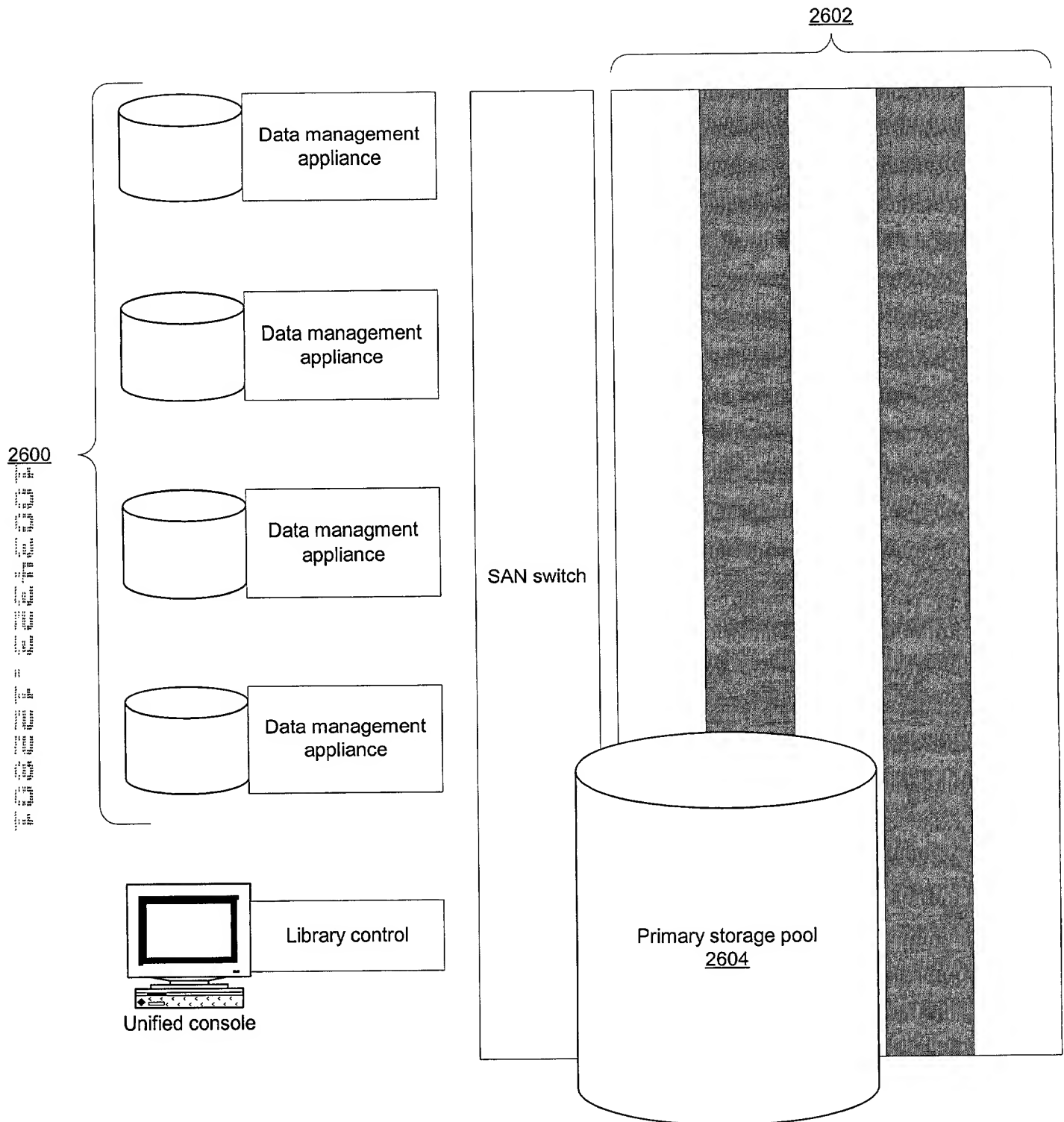


Figure 26